

**CLAIMS**

1. A system for in vivo detection of *H. pylori*, the system comprising
  - an autonomous in vivo sensing device configured for sensing in vivo pH
  - 5 and for transmitting in vivo data to a receiving unit; and
  - an external receiving unit configured for indicating an in vivo pH about equal or larger than 5.5.
2. The system according to claim 1 wherein the sensing device is capable of covering most of a stomach body.
- 10 3. The system according to claim 1 wherein the sensing device includes an image sensor.
4. The system according to claim 1 wherein the sensing device includes an illumination source.
5. The system according to claim 1 wherein the sensing device includes pH indicator.
- 15 6. The system according to claim 5 wherein the pH indicator is a color changing indicator.
7. The system according to claim 6 wherein the pH indicator is configured to change color at a pH of about equal or larger than 5.5.
- 20 8. The system according to claim 6 wherein the pH indicator is attached to an optical window in the sensing device.

9. The system according to claim 6 wherein the pH indicator is immobilized within a sampling chamber in the sensing device.
10. The system according to claim 1 wherein the sensing device comprises at least one sampling chamber.
- 5 11. The system according to claim 1 wherein the sensing device comprises a radio frequency transmitter.
12. The system according to claim 1 wherein the sensing device comprises a power source.
13. The system according to claim 1 wherein the receiving unit is configured for 10 receiving data transmitted from a stomach.
14. The system according to claim 1 wherein the receiving unit is configured for receiving radio frequency signals.
15. The system according to claim 1 wherein the receiving unit comprises a display configured for displaying transmitted in vivo data.
- 15 16. The system according to claim 15 wherein the display is configured for indicating an in vivo pH about equal or larger than 5.5.
17. A system for in vivo detection of H. pylori, the system comprising  
an autonomous in vivo pH sensing device, said device comprising a  
transmitter;
- 20 an external receiving unit; and  
a processor configured for identifying changes in pH over a  
predetermined threshold.

18. The system according to claim 17 wherein the predetermined threshold includes a pH change of about 2.5.
19. The system according to claim 17 further comprising a display.
20. The system according to claim 19 wherein the display is configured for indicating a change of pH over a predetermined threshold.  
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21. The system according to claim 17 wherein the pH sensing device comprises an imaging system.
22. A method for in vivo detection of H. pylori, the method comprising sensing pH in at least one location proximate to a patient's stomach mucus; and  
10 transmitting by radio frequency pH data to an external receiving unit.
23. The method according to claim 22 further comprising indicating a pH value which is about equal to or exceeds a predetermined threshold.
24. The method according to claim 22 wherein sensing pH is by imaging a color changing pH indicator.  
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25. The method according to claim 23 wherein the predetermined threshold is about 5.5.
26. The method according to claim 23 wherein indicating a pH value comprises displaying an indication.
- 20 27. A method for in vivo detection of H. pylori, the method comprising inserting an autonomous pH sensing device into a patient's stomach;

positioning the patient to achieve substantially covering of the patient's stomach body; and receiving in vivo data.

28. The method according to claim 27 wherein the pH sensing device comprises an

5 imaging system.

29. The method according to claim 27 comprising receiving in vivo images of a

patient's stomach.